

Tom's Hardware is supported by its audience. When you purchase through links on our site, we may earn an affiliate commission. [Here's why you can trust us.](#)

Understanding Hard Drive Performance

By [Patrick Schmid](#) published March 05, 2007



PAGE 5 OF 14:



8 Or 16 MB Buffer



Although there are still many drives using a 2 MB buffer, 8 MB can be considered standard today for mainstream desktop hard drives, and there are more and more drives with 16 MB cache as well. Larger hard drive caches not only make sense because of low DRAM prices, but from a technical standpoint as well. Hard drives utilize algorithms to pre-cache data, or to leave data in

memory to store incoming commands, because most products are capable of reorganizing these in order to process them as efficiently as possible, requiring little physical head movement. This feature is called Native Command Queuing (NCQ), and it also requires some memory to work, although the memory requirements are minor.

We wanted to check if there are differences between drives that sport 8 MB or 16 MB of buffer memory. Since we had received almost the complete Seagate Barracuda 7200.10 family, we picked four different 500 GB models to answer the question. All of them use three platters and only vary in terms of their interfaces - SATA/300 or UltraATA/100 - and cache size.

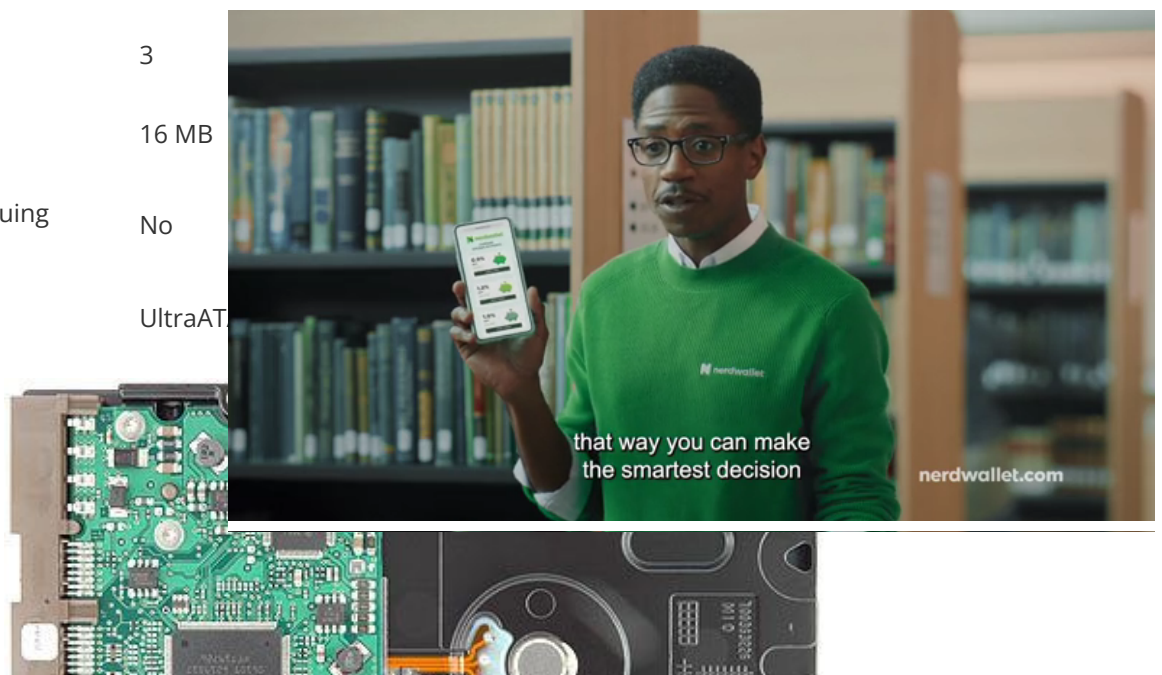
Seagate Barracuda 7200.10 500 GB Comparison Table

Sponsored Links

B
Hi

In California

Manufacturer	Seagate	Seagate	Seagate	Seagate
Product	Barracuda 7200.10	Barracuda 7200.10	Barracuda 7200.10	Barracuda 7200.10
Model	ST3500630A	ST3500630AS	ST3500830A	ST3500830AS
Capacity	500 GB	500 GB	500 GB	500 GB
Spindle Speed	7,200 RPM	7,200 RPM	7,200 RPM	7,200 RPM
Platter	3			
Cache	16 MB			
Native Command Queuing (NCQ)	No			
Interface	UltraATA			





1 2 3 4 5 6 7 8 9 10 11 12 ... 14

◀ PREV PAGE

NEXT PAGE ▶

Patrick Schmid

MORE ABOUT...

LATEST



Ryzen 7 5800X3D vs Core i7-12700K and Core i9-12900K Face-Off: The Rise of 3D V-Cache... ▶



Intel Drops DirectX 9 Support On Xe, Arc GPUs, Switches to DirectX 12 Emulation ▶

[SEE MORE LATEST ▶](#)

TOPICS

STORAGE

 [SEE ALL COMMENTS \(2\)](#)

Steep RTX 30-Series Discounts Suggest Impending 40-Series Launch

Nvidia is discounting its RTX 30-series GPUs at a steep rate, in an apparent attempt to deplete its overabundance of 30-series GPUs prior to the 40-series launch.

Tomshardware

Sponsored

Banned For 84 Years; Powerful Pain Reliever Legalized In California

Health Headlines | Sponsored

Hands Down The Top Credit Card of 2022

CompareCredit.com | Sponsored

[Learn More](#)

Silence Tinnitus By Doing This Once Daily!

Healthbay | Sponsored

The Most Realistic PC Game of 2022

Raid Shadow Legends | Sponsored

Play Now

RTX 4080 and RTX 4070 Power Consumption Dropped By Up to 30%

Nvidia's RTX 4080 and RTX 4070 have reportedly dropped in estimated power consumption by up to 30%, with the RTX 4080 falling to 320W.

Tomshardware

Los Angeles: Unsold Never-Driven Cars Now Almost Being Given Away: See Prices

SUV Deals | Search Ads | Sponsored

Best CPU for Gaming in 2022

Here is the best CPU for gaming for the money, based on our benchmarks. These processors offer the best performance in their price ranges and most are suitable for overclocking.

Tomshardware

If You Have Gum Disease Or Tooth Decay, Do This Immediately (It's Genius)

Healthbay | Sponsored

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.